## REMARKS

Claims 1, 4-13, 15-34, and 39-42 are pending in this application. No claim amendments have been made herein. The title has been amended.

The specification is objected to. Claims 1, 4-13, 15-34, and 39-42 are rejected under 35 U.S.C. § 103(a).

## Objection to the Specification

The specification is objected to because the title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The Examiner suggests the following title: "Detection and Identification of Biological Agents with Three Bragg Grating Filters." The title has been amended to recite "Detection and Identification of Biological Agents Using Bragg Grating Filters." It is respectfully requested that the Examiner withdraw the objection to the specification.

## Rejection of Claims 1, 4-13, 15-34, and 39-42 under 35 U.S.C. § 103(a)

Claims 1, 4-13, 15-34, and 39-42 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Number 5,864,641 to Murphy et al. ("Murphy") in view of U.S. Patent Application Publication No. 2001/0030741 to Herron et al. ("Herron") and further in view of U.S. Patent Application Publication No. 2003/0146109 to Sailor et al. ("Sailor"). In view of the amendments and remarks presented herein, the undersigned respectfully traverses these rejections as set forth below.

Murphy, Herron, and Sailor, alone or in combination, fail to teach or suggest each and every element of the pending claims. More specifically, Murphy, Herron, and Sailor fail to teach or suggest "the first filter contains at least one detection molecule for binding the target agent thereto and the second filter contains no detection molecules for binding the target agent thereto," as recited in claim 1, "the second optical grating does not contain a detector molecule for binding the at least one target agent thereto," as recited in claim 10, and "the second optical grating does not include a detector molecule for binding the target agent within the sample thereto," as recited in claim 20. In other words, three filters or optical gratings are used: (1) a first filter or optical grating having a binding for the target agent, (2) a second filter or optical

grating having no binding for the target agent, and (3) a third filter or optical grating that is not exposed to the first sample.

On page 3 of the Office Action, the Examiner recognizes that "Murphy et al. fails to disclose a second filter without detection molecules, comparing the first filter measurements to the second, a third filter, comparing the first and second filter measurements to the third filter and that the first, second and third filters are porous Bragg gratings." Accordingly, the Examiner appears to assert that Murphy only teaches a single filter.

Herron fails to cure the deficiencies of Murphy. On page 3 of the Office Action, the Examiner asserts that Herron recites the three filters in paras. [0039] and [0040]. Para. [0039] is reproduced below.

> [0039] A design with at least two individual reservoirs has significant advantages over a single reservoir embodiment, for instance, when it is desirable to measure the test sample fluorescence simultaneously with fluorescence from a "control" region on the same waveguide. For example, the level of non-specific binding to the waveguide (or non-specific fluorescence) can be subtracted from the test sample fluorescence. Also, measurement changes due to fluctuations in intensity of the exciting light can be corrected. In a displacement assay, the "control" region could be a pre-loaded waveguide with no analyte present in the sample, or with a known amount of analyte. With the depicted embodiment of three or more wells, fluorescence can be measured for both a no-analyte control and at least one known calibration analyte sample in addition to the "unknown" or test sample. However, even with a single reservoir, the invention is able to analyze multiple analytes in a single sample (e.g., by use of a single waveguide in multiple experiments).

Herron recites that the flow cell design can have three or more wells. Besides a well having the analyte, one well could contain "no analyte present in the sample" or "a known amount of analyte." But Herron does not teach a "second filter having no binding agent for the target agent," as recited in claim 1, and similarly recited in claims 10 and 20. A well having "no analyte" cannot teach a filter with no binding agent for an analyte. And, similarly, a well having "known amount of analyte" does not teach a filter with no binding agent for an analyte. The remaining uncited portion of Herron also fails to recite a second filter having no binding agent for the target agent. In fact, nowhere else does Herron discuss the control wells. So even though Herron recites that three or more wells can be used, Herron does not teach that one of those filters can have the target agent with no binding agent. As a result, Herron fails to cure the deficiencies of Murphy.

Sailor fails to cure the deficiencies of Murphy and Herron. The Examiner only asserts that Sailor discloses that the "filter is a porous Bragg grating." Office Action, page 3. Sailor only recites a system having one porous thin film 10 that interacts with a sample. Para. [0014]. As a result, Sailor cannot teach a "second filter having no binding agent for the target agent." Thus, Sailor fails to cure the deficiencies of Murphy and Herron.

Thus, Murphy, Herron, and Sailor, alone or in combination, fail to teach or suggest each and every limitation of independent claims 1, 10, and 11. Therefore, the undersigned representative submits that dependent claims 4-9, 11-13, 15-19, 21-34, and 39-42 are also allowable. Accordingly, it is respectfully requested that the rejection of claims 1, 4-13, 15-34, and 39-42 under 35 U.S.C. § 103(a) be withdrawn.

## CONCLUSION

The undersigned representative respectfully submits that this application is in condition for allowance, and such disposition is earnestly solicited. If the Examiner believes that the prosecution might be advanced by discussing the application with the undersigned representative, in person or over the telephone, we welcome the opportunity to do so. In addition, if any additional fees are required in connection with the filing of this response, the Commissioner is hereby authorized to charge the same to Deposit Account No. 50-4402.

Respectfully submitted,

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